CONTAMINANTS AND CONSTITUENTS (CONT.)

SECONDARY CONSTITUENTS

Many constituents that are often found in drinking water – such as calcium, sodium, or iron - can cause taste, color, and odor problems, called secondary constituents, which are regulated by the State of Texas (not by the EPA). These constituents are not causes for health concern.

Lead can be harmful. If present, elevated levels of lead can cause serious health problems, especially for pregnant women and young children. Lead in drinking water is primarily from materials and components associated with service lines and home plumbing. This water supply is responsible for providing high quality drinking water, but cannot control the variety of materials used in plumbing components. When your water has been sitting for several hours, you can minimize the potential for lead exposure by flushing your tap for 30 seconds to two minutes. If you are concerned about lead in your water, you may have your water tested. For more information visit the Safe Drinking Water Hotline at **www.epa.gov/ground-water-and-drinking-water/basic-information-about-lead-drinking-water**.

SPECIAL NOTICE FOR ELDERLY, INFANTS, CANCER PATIENTS, PEOPLE WITH HIV/AIDS OR OTHER IMMUNE PROBLEMS:

You may be more vulnerable than the general population to certain microbial contaminants, such as cryptosporidium, in drinking water. Infants; some elderly or immune-compromised persons, such as those undergoing chemotherapy for cancer; those who have undergone organ transplants; those who are undergoing treatment with steroids; and people with other immune system disorders can be particularly at risk from infections. You should seek advice about drinking water from your physician or care provider. Additional guidelines on appropriate means to lessen the risk of infection by cryptosporidium are available from the **Safe Drinking Water Hotline (800) 426-4791**.

PUBLIC PARTICIPATION OPPORTUNITIES

The City of Abilene Water Utilities Department is governed by the Abilene City Council, which meets on the second and fourth Thursdays of each month at 8:30 a.m. in City Council Chambers, City Hall, 555 Walnut. You may also contact the department director at **(325) 676-6419**.

City of Abilene Water Utilities Department
555 Walnut St., P.O. Box 60
Abilene, TX 79604
325-676-6419

WHERE DOES OUR WATER COME FROM?

Abilene's water comes from surface water sources.

Lake Fort Phantom Hill in North Abilene

Hubbark Creek Lake between Albany and Breckenridge

Lake O.H. Ivie near Ballinger

Lake Abilene (reserve source of water)

Lake Kirby in South Abilene, reserved for landscape irrigation

CONTAMINANTS AND CONSTITUENTS

The sources of drinking water (both tap and bottled water) include rivers, lakes, streams, ponds, reservoirs, springs, and wells. As the water travels over the surface of the land or through the ground, it dissolves naturally occurring minerals and, in some cases, radioactive material, and can pick up substances resulting from the presence of animals or human activity.

Contaminants that may be present in source water include:

- **Microbial contaminants**, such as viruses and bacteria, that may come from sewage plants, septic systems, agricultural livestock operations and wildlife
- **Inorganic contaminants**, such as salts and metals, which can be naturally occurring or result from urban storm water runoff, industrial or domestic wastewater discharges, oil and gas production, mining or farming
- **Pesticides and herbicides** that may come from a variety of sources, such as agriculture, urban storm water runoff, and residential uses
- **Organic chemical contaminants**, including synthetic and volatile organic chemicals, which are byproducts of industrial processes and petroleum production and can also come from gas stations, urban storm water runoff, and septic systems
- **Radioactive contaminants**, which can be naturally occurring or the result of oil and gas production and mining activities

All drinking water may contain contaminants. When drinking water meets federal standards, there may not be any health-base benefits to purchasing bottled water or point of use devices. The presence of contaminants does not necessarily indicate that water poses a health risk.

Visit our website to learn more about water conservation in Abilene, including the Stage we are currently in and watering restrictions it requires.

www.saveabilenewater.com

IN THE COMING YEAR...

OCTOBER 2018

Fall Clean where residents can bring brush, tree limbs, tires, electronics, oil, and other household waste to the Recycling Center during this free disposal weekend

MARCH 22, 2019

World Water Day

APRIL 1, 2019

Texas Trash-off Community cleanups held statewide and sponsored by Don't Mess with Texas and TXDOT

APRIL 22, 2019

Earth Day

Keep Abilene Flowing

CITY OF ABILENE

2017 ABILENE WATER UTILITIES DEPARTMENT

ANNUAL & WATER QUALITY REPORTS

CITY OF ABILENE

SAVE ABILENE WATER

MESSAGE FROM THE DIRECTOR OF WATER UTILITIES

It has been another busy year for the City of Abilene Water Utilities Department. With Fort Phantom Hill Lake levels healthy, staff have been able to turn the focus from high profile Drought Response Strategies to capital improvement and maintenance projects for existing facilities andinfrustructure.

PROJECTS COMPLETED IN 2017

- Completed major renovations on the Highland Elevated Water Storage Tank and recoated the Five Points Business Park Elevated Storage Tank in order to extend their useful service life
- Nearly completed the rehabilitation of the Grimes Water Treatment Plant Steel Clearwell
- Corrected long-time operational issues in far-east Abilene by completing the Elmdale Pump Station Relocation and 2nd Pressure Plane Water Line Improvement projects, which will greatly improve the system pressure and delivery capacity in that area

PROJECTS CURRENTLY UNDERWAY

O.H. Ivie Electrical Substation Iand O.H. Ivie Intake Pump Station HVAC Improvements projects
With the Ivie Pipeline System and Hargesheimer Water Treatment Plant System now 15 years old, these projects are necessary to maintain the reliability of the Ivie pipeline system. The HVAC project is essential to provide cooling for the variable frequency used on the large pumps at the Ivie Intake Pump Station.

The Sanitary Sewer Interceptor Line Cleaning and Inspection project
Recently awarded, this project involves the cleaning and CCTV inspection of more than 10,000 linear feet of large 15” to 21” sewer mains in south Abilene.

PROJECTS IN THE BIDDING PHASE

- The 24” Sewer Main Abandonment
- The Northeast Water Treatment Plant Prison Pump modifications
- The Buck Creek Pump Station Rehabilitation Project
- The Kirby Lake Dam, Fort Phantom Hill Dam, and Lake Abilene Miscellaneous Repairs project
- The Water Meter Replacement and Advanced Metering Infrastructure project

MASTER PLAN

Planning for the future of the existing water utility infrastructure is also a very important process. Currently working with consultants, City staff prepare for a Water Distribution System Master Plan and Wastewater Collection System Master Plan, with the Water Treatment Plant Master Plan in the works.

Master plans are important tools for evaluating the needs of systems, developing and prioritizing projects, estimating costs, scheduling implementation, and projecting fiscal needs. Because there are more things to fix than funds, the results of the master plans will be used to develop a comprehensive maintenance and replacement guide.

We must maintain our water utility infrastructure and spend available funds on projects that are not only the highest priority but that both staff and you (our customer), can understand, appreciate, and continue to support.

Rodney Taylor
Director of Water Utilities, City of Abilene

SAVE ABILENE WATER

DOWN THE DRAIN:
ABILENE'S WASTEWATER TREATMENT PROCESS

Supplying safe, clean drinking water to a parched Abilene area is a top priority for the Water Utilities Department. But treating water after it has been used, that then enters the sewer system, is also a priority. Turning sewer water into exceptional quality reuse water is a complex, multi-step process.

This process was improved in 2015 when Hamby Water Reclamation Facility (WRF) fully renovated and expanded. Not only does the plant continue to treat water to standards suitable for discharge into Freewater Creek and for non-drinking uses (such as turf irrigation), but the enhancements produce water of sufficient quality for indirect reuse. This means that advanced treatment allows the plant to pump an average of 7 million gallons per day (MGD) of highly-treated water into Lake Fort Phantom Hill, thus increasing clean water supplies.

As used water is collected in the sewer system, it is moved by gravity to the Buck Creek Pump Station for preliminary treatment and grit removal. Here solids greater than a quarter inch are screened and sand particles are spun out of the water. That water is then pumped to the Hamby WRF for additional pre-treatment and items less than a quarter inch are removed.

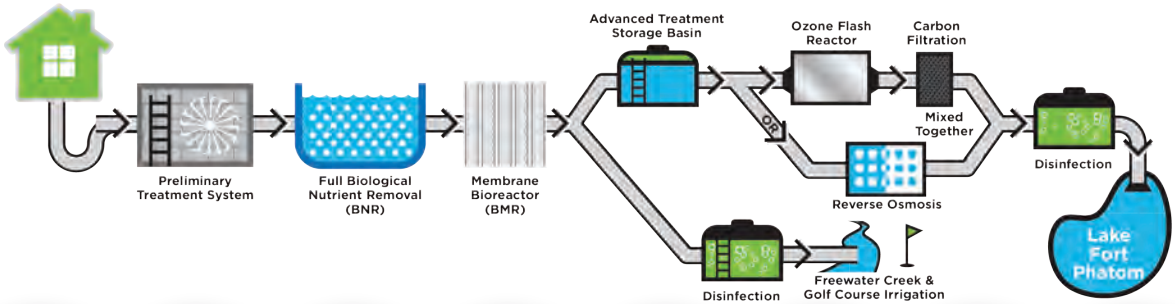
Following preliminary treatment, the wastewater is ready for biological nutrient removal (BNR). As the name implies, wastewater is exposed to anoxic (without oxygen) and aerobic (using oxygen) microorganisms to eliminate biological material and phosphorus.

Suspended particles are separated from the water in the membrane bioreactor (MBR) where the membrane modules pull water through for advanced filtration. Once filtered, this clear, treated water is given a final disinfection and now meets quality standards for discharge into Freewater Creek and for non-drinking, irrigation use.

Indirect reuse (discharging water to Lake Fort Phantom Hill) requires advanced treatment. Excess water awaiting additional treatment is stored in the advanced treatment storage basin. From storage, the water is treated either in the ozone flash reactor then passed through biologically active carbon filtration or it is treated by reverse osmosis (RO). Ozone is apotent gas used for further contaminant removal, while RO forces water through semi-permeable membranes to remove more salts. The resulting water is mixed together to produce water with the best attributes for discharge. This highly treated water is then given a final disinfection and sent to Lake Fort Phantom Hill.

Sampling and testing is done at multiple points during the treatment process. Wastewater operators also monitor inflows and discharges, check storage basin levels, perform plant maintenance, water testing, and process monitoring. Wastewater plant operators are supervised, tested, and licensed and have a thorough understanding of how to produce safe, dischargeable effluent water. These professionals work to ensure that all discharged water meet standards set by the Texas Commission on Environmental Quality (TCEQ).

The removal and treatment of wastewater is critical to a safe, healthy community. The improvements done at the Hamby WRF in 2015 represent the City of Abilene's continued commitment to providing superior wastewater treatment and increasing available water supplies.



SAVEABILENEWATER

WASTEWATER TREATMENT

Amount of wastewater treated in fiscal year 2017 (10/1/2016 to 9/30/2017):

TOTAL TREATED FLOW

4.782 BILLION GALLONS

MAXIMUM CAPACITY OF THE PLANT

22 MILLION GALLONS PER DAY

Wastewater quality is protected against industrial pollution through an industrial pre-treatment program. Industrial users are required to treat wastewater to certain standards before it is released into the municipal sanitary sewer system.

Wastewater quality is monitored at all stages of treatment, according to state and federal requirements.

LEAKS, STOP AND REPAIRS

During the last fiscal year, 424 leaks were repaired by water department personnel. The department also replaced 1,510 feet of water line and 2,428 feet of sewer line. More than 730,285 feet of sewer line was cleaned, 7,101 feet was smoke tested, and another 79,735 feet was TV inspected. The Water Utilities department responded to 524 possible sewer stops and verified 305 of them as actual sewer stops - 38 of which resulted in an overflow.

OF WATER VIOLATIONS INVESTIGATED **40**

OF WATER MAIN LEAKS REPAIRED **424**

OF SEWER MAINS REPAIRED **222**

OF SEWER STOPS INVESTIGATED **524**

FISCAL YEAR **2017 WATER STATS**

Abilene's water distribution system is made up of approximately 936 miles of pipe, serving residents and businesses in Abilene.

Amount of water treated	7.477 billion gallons

Abilene water sources and how much water taken from each:

Lake Fort Phantom Hill	1.934 billion gallons
Hubbard Creek Reservoir	3.800 billion gallons
Lake O.H. Ivie	1.860 billion gallons

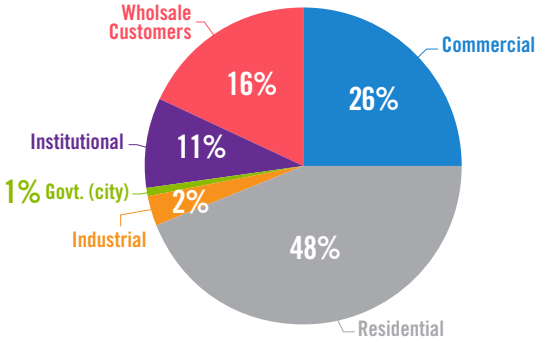
Abilene treatment plants and capacity:

Northeast Treatment Plant	25 million gallons per day
Grimes Treatment Plant	15 million gallons per day
Hargesheimer Treatment Plant	6 million gallons per day

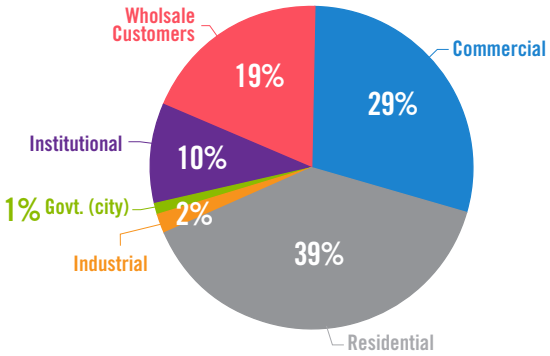
SAVE ABILENE WATER

FISCAL YEAR 2015
CONSUMPTION/BILLING DATA

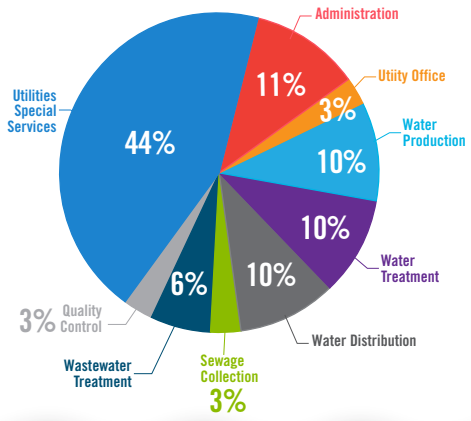
USAGE



BILLED REVENUE



APPROVED FISCAL YEAR 2016
OPERATING EXPENSES



GREASE IN ABILENE:
INCIDENTS DECREASING BUT STILL WORK TO DO

The issue of grease coating and obstructing Abilene's sewer system has been an ongoing problem. While we have been getting better at not pouring as much grease down our drains as a community, we still have work to do.

Statistics show that 2011 through 2016, the City was experiencing more than 100 sewer overflows a year. Of those, the percentage that were grease related bounced from 73 percent to as low as 56 percent.

To reduce the problem, campaigns to increase awareness began in 2016. Businesses became more informed about the importance of regularly cleaning grease traps, and residents were encouraged to **Cool it. Can it. Trash it.** rather than pouring grease down drains.

Within the year, the number of overflows have decreased. Great news, but we still have a ways to go. Still early to tell, but it seems that the percentages of the number of overflows due to grease are on the rise. In 2017, we had 36 overflows, with 30 (83%) due to grease. Not even halfway through 2018, we are currently at 86%. Also too early to tell, but the introduction of flushable wipes, which do not disintegrate as they say, may add to the rising ratio.

To learn more, visit *Drainwreck.com* or *KeepAbileneFlowing.com*

Keep Abilene Flowing

Over time, fats, oils and grease poured down the drain coat the walls of the pipe and as it builds up, forms a clog, which then causes contents to back up or overflow. Learn how to prevent these buildups and clogs by visiting:

www.keepabileneflowing.com

EMPLOYEE **LICENSING**

To ensure that the City of Abilene's Water Utilities Department meets all state requirements and standards for water and wastewater management, our team members maintain the following licenses and certifications. Categories of licenses rank with 'A' being the highest level of experience, training, testing and work experience.

WATER OPERATOR

To become licensed as a public water system operator, an applicant must complete the required training courses, meet the required education and required experience, submit the Texas Commission on Environmental Quality (TCEQ) application, and pass the applicable exam. Operators perform process-control duties in the production, treatment, and/or distribution of drinking water.

- A **13 Licenses**
- B **3 Licenses**
- C **41 Licenses**
- D **9 Licenses**

WASTEWATER OPERATOR

Operators of a municipal wastewater treatment facility - or those who supervise wastewater collection activities - must be appropriately licensed. Wastewater operators must complete the required training courses, meet the required education and experience, submit the TCEQ application, and pass the applicable exam. Operators are responsible for performing adequate process control of wastewater treatment and collection facilities.

- A **8 Licenses**
- B **5 Licenses**
- C **17 Licenses**
- D **6 Licenses**

5 Licenses **Wastewater Collection I**

9 Licenses **Wastewater Collection II**

CUSTOMER SERVICE INSPECTOR (CSI)

A customer service inspector seeks to identify and prevent cross-connections, potential contaminant hazards, and illegal lead materials. Inspections are completed for new construction; on any existing service where suspected cross-connections or other potential contaminant hazards exist; or after any material improvement, correction, or addition to private water distribution facilities.

5 Certifications

BACKFLOW PREVENTION ASSEMBLY TESTER (BPAT)

A person who repairs or tests the installation or operation of backflow prevention assemblies must hold a license issued by the TCEQ. Backflow prevention assembly testers are qualified to test and repair assemblies on any domestic, commercial, industrial, or irrigation service.

1 Certification

LAB A & C

Lab A **1 Certification**

Lab C **4 Certifications**

OUR **HISTORY**

Named after the Kansas cattle town, Abilene was incorporated in 1883 after farmers, ranchers, businessmen, and land speculators persuaded the Texas and Pacific Railroad to bypass Buffalo Gap, then the county seat, and instead come through northern Taylor County. The presence of the railroad and water from the Big Elm, Cedar, and Catclaw Creeks made Abilene a hospitable site to establish a town.[1]

As Abilene grew, so did its need for water. Lytle Lake (1897), Lake Abilene (1919), Lake Kirby (1927), and Lake Fort Phantom Hill (1937) were constructed over the years to ensure a municipal water supply. Abilene Electric and Power company began operating in 1891 and was combined with city water to form Abilene Light and Water Company in 1905. In 1923, West Texas Utilities was organized to handle electric service. Lone Star Gas took over gas operations. Water utility operations have remained with the city.[1]

Abilene's position as a regional commercial hub caused an almost steady population increase, quickly outgrowing the effectiveness of Lytle Lake, Lake Abilene, and Kirby Lake as water sources. Lake Fort Phantom Hill became the primary source of water. In partnership with other cities, Abilene contracted to obtained water from the Hubbard Creek Reservoir in 1962.[2]

Along with the new water resources, treatment facilities were added to the water system. Grimes Plants (1939) and Northeast Treatment Plants (1970) were built to accommodate the treatment capacity needs. By the 1980s, with the city's growing military presence, booming oil economy, and expansive agriculture sector, city leaders worked to meet future water needs. In 1985, city residents agreed to participate in the construction of the Lake O.H. Ivie, which was completed in 1990. With design and construction beginning in 2000, the 52-mile pipeline, storage tanks, pump stations and Hargesheimer Treatment Plant went into service in 2003.[3]

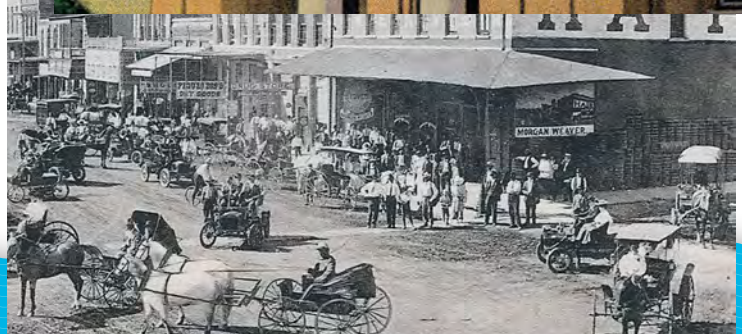
Over the past several years, the City of Abilene has been working diligently to identify and explore future water management strategies. Two primary options have been identified. One is to purchase water from the Brazos River Authority, which would originate from the Possum Kingdom Reservoir. The second is to obtain a permit allowing the construction of the Cedar Ridge Reservoir on the Clear Fork of the Brazos Brazos River. Each project has great potential for Abilene. To implement, infrastructures will need to be built, a need for ongoing maintenance, as well as operating energy to transport raw water long distances to the city's water treatment facilities.

Thanks to the support of Abilene residents and businesses, we are proud of how our city continues to adapt to drought conditions, a growing population, and increasing demands on our water supply.

(1) Texas State Handbook Online, https://tshaonline.org/handbook/online/articles/hda01

(2) Water Development Board Report 48, December 1966, page 83. http://www.fwspubs.org/doi/suppl/10.3996/012015-JFWM-003/-suppl_file/012015-jfwm-003.s2.pdf

(3) City of Abilene Council Resolution No. 39-2003, http://w-w2.abilenetx.com/Resolutions/Resolutions%202003/Resolution%2039-2003.pdf



WATER QUALITY REPORT

JANUARY-DECEMBER 2015 WATER QUALITY REPORT

Through vigilant oversight, the City of Abilene Water Utilities Department is dedicated to providing high-quality, safe water. It begins with the city's reservoirs, which provide good-quality raw water. Along the water's journey into customers' homes and businesses, trained, certified operators consistently work to meet stringent water quality standards. Water is analyzed in all stages of production - from the city's creeks and lakes, at treatment plants, and into the distribution system - ensuring that it is safe to drink. We are proud to report that our drinking water meets or exceeds all United States Environmental Protection Agency (EPA) and TCEQ drinking water requirements.

A summary detailing the quality of the water the city provides its customers follows. This analysis was made using data from the most recent EPA-required tests. We hope this information helps you become more knowledgeable about what is in your drinking water.

If you would like more information about Abilene's water quality, water assessments and protection efforts, please call the City of Abilene's environmental laboratory at (325) 676-6041.

En español: Este informe incluye informacion importante sobre el agua potable. Si tiene preguntas o comentarios sobre este informe en español, favor de llamar al tel. (325) 675-6381 – para hablar con una persona bilingue en español.

A Source Water Susceptibility Assessment for your drinking water sources is currently being updated by the TCEQ. This information describes the susceptibility and types of constituents that may come into contact with your drinking water, based on human activities and natural conditions. The information in the assessment will allow us to focus our source water protection strategies. Some of this information will be available later this year on Texas Drinking Water Watch at **dww2.tceq.texas.gov/DWW**.

Type of Contaminant	Year or Range	Contaminant (unit of measure)	Highest Level Detected	Range of Levels Detected	MCLG	MCL	Violation	Source of Contaminant
Inorganic Contaminants	2017	Arsenic (ppb)	0	0	10	0	N	Erosion of natural deposits
	2017	Barium (ppm)	0.126	0.102-0.126	2	2	N	Discharge from plastic and fertilizer factories; discharge from steel/metal factories
	2017	Cyanide (ppb)	170	24.7-170	200	200	N	Discharge from plastic and fertilizer factories; discharge from steel/metal factories
	2017	Fluoride (ppm)	0.7	0.68-0.72	4	4	N	Erosion of natural deposits; water additive for strong teeth; discharge from fertilizer and aluminum factories
	2017	Nitrate (ppm)	1.5	0.16-1.49	10	10	N	Erosion of natural deposits; runoff from fertilizer use; leaching from septic tanks or sewage
	2017	Selenium (ppb)	4	<3-4	50	50	N	Erosion from natural deposits; discharge from petroleum refineries
Radioactive Contaminants	2014	Beta/proton Emitters (pCi/L)	11.5	11.5-11.5	0	50	N	Erosion of natural deposits; decay of natural and man made deposits
	2017	Gross Alpha	3.4	<3.0-3.4	na	na	N	Erosion of natural deposits Decay of natural and man made deposits.
	2017	Gross Beta	8.8	6.2-8.8	na	na	N	Erosion of natural deposits Decay of natural and man made deposits.
	2017	Radium 228 (pCi/L)	<1.0	<1.0	0	5	N	Erosion of natural deposits Decay of natural and man made deposits.
	2017	Uranium (mg/L)	0.0023	<0.0010-0.0023	0	na	N	Byproduct of drinking water disinfection
Disinfection Byproducts	2016	Total Haloacetic Acids (ppb)	48	16.3-48.2	No goal for the total	60	N	Byproduct of drinking water disinfection
	2016	Total Trihalomethanes (ppb)	54.4	12.6-54.4	No goal for the total	80	N	Byproduct of drinking water disinfection
	2016	Chlorite (ppm)	0.92	<0.01-0.92	0.8	1	N	Byproduct of drinking water disinfection
Unregulated Contaminants	2016	Chloroform (ppb)	7	<1-7.03	na	na	na	Byproduct of drinking water disinfection
	2016	Bromoform (ppb)	13.3	3.66-13.3	na	na	na	Byproduct of drinking water disinfection
	2016	Bromodichloromethane (ppb)	14.2	2.38-14.2	na	na	na	Byproduct of drinking water disinfection
	2016	Dibromochloromethane (ppb)	19.7	3.57-19.7	na	na	na	Byproduct of drinking water disinfection
	2016	Bromodichloroacetic acid (ppb)	9.6	6.2-19.6	na	na	na	Byproduct of drinking water disinfection
	2017	Trichloroacetic Acid (ppb)	1.41	<1.0-1.41	na	na	na	Byproduct of drinking water disinfection

Type of Treatment	Year or Range	Disinfectant Used	Average Level	Minimum Level	Maximum Level	MRDL	MRDLG	Source of Chemical
MRDL	2017	Chloramines (ppm)	3.7	3.1	4.5	4.0	4.0	Disinfectant used to control microbes

Type of Contaminant	Year or Range	MCGL	The 90th Percentile	Number of Sites Exceeding Action Level	Action Level	Source of Contaminant	No Violations for Lead or Copper
Lead (ppb)	2017	0	0.05	0	15	Corrosion of household plumbing systems; erosion of natural deposits.	
Copper (ppm)	2017	1.3	0.40	0	1.3	Corrosion of household plumbing systems; erosion of natural deposits.	

Type of Contaminant	Year or Range	Highest Single Level Detected	Lowest Monthly % of Samples Meeting Limits	Limit (Treatment Technique)	Lowest Monthly % Meeting Limit	Violation	Source of Contaminant
Turbidity (NTU)	2017	0.28	100%	1	0.3	N	Soil runoff.

Type of Contaminant	Year or Range	Contaminant Source	Average Level	Minimum Level	Maximum Level	Unit of Measure	Source of Contaminant
Total Organic Carbon	2017	Source Water	6.7	5.4	9.1	ppm	Naturally present in environment.
	2017	Drinking Water	3.9	2.3	5.6	ppm	Naturally present in environment.

Type of Contaminant	Year or Range	Contaminant	Average Level	Minimum Level	Maximum Level	MFL	Construction Materials
Asbestos	2012	Asbestos	ND	ND	ND	7	

Type of Contaminant	Year or Range	Contaminant	Highest Monthly % of Positive Samples	MCL	Unit of Measure		Source of Contaminant
Total Coliform	2017	Total Coliform Bacteria	1.7	*	Presence	No monitoring violation	Naturally present in environment.

* Presence of Coliform bacteria in 5% or more of the monthly samples.

Organic Contaminants - none detected | **Fecal Coliform - none detected** | **Real Water Loss 8.8%**

Type of Contaminant	Year or Range	Contaminant (unit of measure)	Average Level	Mimimum Level	Maximum Level	Secondary Limit	Source of Contaminant
Secondary and other Constituents not Regulated	2017	Aluminum (ppm)	0.024	<0.02	0.029	0.05	Naturally present in environment
	2017	Bicarbonate (ppm)	146	135	155	na	Corrosion of carbonate rocks such as limestone
	2017	Calcium (ppm)	64.5	55.1	83.1	na	Naturally present in environment
	2017	Chloride (ppm)	114	87	166	300	Naturally present in environment
	2017	Copper (ppm)	<0.002	<0.002	0.002	1	Corrosion of household plumbing, erosion from natural deposits; leaching from wood preservatives
	2017	Magnesium (ppm)	18.5	10.8	33.7	na	Naturally present in environment
	2017	Manganese (ppm)	0.019	0.0169	0.0232	0.05	Naturally present in environment
	2017	Nickel (ppm)	0.034	0.0029	0.0036	na	Erosion of natural deposits.
	2017	pH (units)	8.1	8	8.2	>7.7	Measure of corrosivity of water.
	2017	Sodium (ppm)	67.8	52.3	98.8	na	Erosion of natural deposits; byproduct of oil field activity
	2017	Sulfate (ppm)	115	63	212	300	Naturally occurring; common industrial by product; by product of oil field activity
	2017	Total Alkalinity as CaCO3 (ppm)	120	111	127	na	Naturally occurring soluble mineral salts
	2017	Total Dissolved Solids (ppm)	485	366	717	1000	Total dissolved mineral constituents in water
	2017	Total Hardness as CaCO3 (ppm)	237	182	346	na	Naturally occurring calcium
	2017	Conductivity (uhmos/cm)	915	698	1340	na	Naturally present in environment
	2017	Potassium (mg/L)	7.47	6.53	7.95	na	Naturally present in environment
	2017	Zinc (mg/L)	<0.005	<0.005	0.005	na	Naturally present in environment
	2017	Atrizine (ppb)	0.1	<0.1	0.15	3	Run off from pesticide use
	2017	Di(2-ethylhexyl) phthalate	0.6	<0.6	0.67	6	Discharge from plastic factories

DEFINITIONS AND ABBREVIATIONS:

Action Level (AL) – The concentration of a substance, which, if exceeded, triggers treatment or other requirements which a water system must follow

J - Analyte detected below the quantitation limit but above the detection limit

Maximum Contaminant Level (MCL) - The highest level of a substance that is allowed in drinking water. MCLs are set as close to the MCLGs as feasible using best available treatment technology

Maximum Contaminant Level Goal (MCLG) - The level of a substance in drinking water below which there is no known or expected health risk. MCLGs allow for a margin of safety.

Maximum Residual Disinfectant Level (MRDL) – The highest level of disinfectant allowed in drinking water. There is convincing evidence that addition of a disinfectant is necessary for control of microbial contaminants.

microbial contaminants.

Maximum Residual Disinfectant Level (MRDLG) – The level of of a drinking water disinfectant below which there is no known expected risk to health. MRDLGs do not reflect the benefits of the use of disinfectants to control microbial contaminants.

MFL - Million fibers per liter (a measure of asbestos)

ND - Analyte not detected in sample

NTU – Nephelometric turbidity units. Unit of measure of the turbidity (cloudiness) of the water

pCi/L – Picocuries per Liter (a measure of radioactivity)

ppb – parts per billion or micrograms per liter (µg/L). One ounce in 7,350,000 gallons of water

ppm – parts per million or milligrams per liter (mg/L). One ounce in 7.350 gallons of water

Treatment Technique (TT) - A required process intended to reduce the level of a substance in drinking water

Unregulated Contaminants Monitoring Rule 3 (UCMR 3)

The UCMR program was developed in coordination with the Contaminant Candidate List (CCL). The CCL is a list of contaminants that are not regulated by the National Primary Drinking Water Regulations, are known or anticipated to occur at public water systems and may warrant regulation under the Safe Drinking Water Act. Data collected through UCMR are stored in the National Contaminant Occurrence Database (NCOD) to support analysis and review of contaminant occurrence, to guide the CCL selection process and to support the Administrator's determination of whether to regulate a contaminant in the interest of protecting public health. For additional information visit http://www.epa.gov/lawsregs/rulesregs/sdwa/ucmr/ucmr3/index.cfm.

Contaminant	Year of Range	Level			MCL	MCLG	Unit of Measure	Source of Contamination
		Average	Minimum	Maximum				
Chromium 6	2013	<0.030	<0.030	0.062	N/A	N/A	ug/L	Naturally-occurring element; used in making steel and other alloys; used for chrome plating, dyes, pigments, leather tanning, and wood preservation.
Chlorate	2013	248	<20	370	N/A	N/A	ug/L	Chlorate compounds are used in agriculture as defoliants or dessicants and may occur in drinking water related to use of disinfectants such as chlorine dioxide.
Chromium	2013	0.075	<0.20	0.3	N/A	N/A	ug/L	Naturally-occurring element; Discharged from steel and pulp mills, Erosion of natural deposits
Molybdenum	2013	3.77	1.2	4.6	N/A	N/A	ug/L	Naturally-occurring element and is commonly used as molybdenum trioxide as a chemical reagent
Strontium	2013	856	69	1300	N/A	N/A	ug/L	Naturally-occurring element used as strontium carbonate in pyrotechnics, in steel production, as a catalyst and as a lead scavenger.
Vanadium	2013	0.109	<0.30	0.38	N/A	N/A	ug/L	Naturally-occurring element cpmmonly used as vanadium pentoxide in the production of other substances and as a catalyst.
PFHpA	2013	<0.010	<0.010	0.016	N/A	N/A	ug/L	Contamination is typically localized and associated with a specific facility, for example, an industria facility where PFAS were produced or used to manufacture other products, or an oil refinery, airfield or other location at which they were used for firefighting.
PFHxS	2013	<0.030	<0.030	0.052	N/A	N/A	ug/L	Contamination is typically localized and associated with a specific facility, for example, an industria facility where PFAS were produced or used to manufacture other products, or an oil refinery, airfield or other location at which they were used for firefighting.
PFOS	2013	<0.040	<0.040	0.046	N/A	N/A	ug/L	Contamination is typically localized and associated with a specific facility, for example, an industria facility where PFAS were produced or used to manufacture other products, or an oil refinery, airfield or other location at which they were used for firefighting.

To view potential health affects please refer to EPA advisory information at https://www.epa.gov/sites/production/files/2016-06/documents/drinkingwaterhealthadvisories_pfoa_pfos_updated_5.31.16.pdf ".